

## ND T 265 - LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOILS

Conduct this procedure according to ND T 265.

Consult the current edition of AASHTO for procedure in its entirety and equipment specification details.

### SCOPE

This procedure is used to determine the total moisture content of a soil. The soil is dried to remove all free moisture. This test measures the weight of the moisture removed from the soil.

### APPARATUS

Oven  
Balance  
Sample containers with cover

### PROCEDURE

Record all weights to the nearest 0.1 g or 0.1%.

Weigh a clean, dry, and empty container including the cover and record as tare weight.

Determine sample size needed from the table below. The sample obtained must be representative of the soil.

Maximum Particle Size	Minimum Mass of Sample
No. 40 (0.425 mm) sieve	10 g
No. 4 (4.75 mm) sieve	100 g
1/2" (12.5 mm)	300 g
1" (25.0 mm)	500 g
2" (50 mm)	1000 g

Place sample in container and cover to prevent moisture loss. Weigh sample and record as mass of original sample.

To dry sample, remove cover and place in oven at temperature of  $230 \pm 9^{\circ}\text{F}$  ( $110 \pm 5^{\circ}\text{C}$ ). A sample allowed to dry overnight, or 15 to 16 hours, is considered dried to a constant weight. Remove the sample from the oven, cover, and allow it to cool before placing on balance. Weigh the sample with cover and record this weight as dry weight.

If the sample is not allowed to dry overnight, place the sample in the oven for a period of time. Remove sample from the oven, cover, and allow to cool before placing on balance. Weigh the sample and record the reading. Repeat the process until two successive readings show a constant weight. Record the final weight as mass of dry sample.

Discard sample after test.

## CALCULATIONS

Calculate the percent moisture as follows:

$$A = [(B - C)/(C - D)] \times 100$$

*A = Percent moisture*

*B = Mass of original (wet) sample, and container*

*C = Mass of dry sample, and container*

*D = Mass of container*

## REPORT

Report moisture to the nearest 0.1%.

## NOTES

Constant weight is defined as when further drying will cause less than 0.1% additional loss in mass when weighed at specified intervals. Specified weighing interval for oven drying of samples is one hour.

## CALIBRATION

Calibration is to be done annually, as a minimum, and whenever damage or repair is needed.